

383D MEETING

The 383d meeting was called to order at 8:10 p.m., Thursday, April 1, 1926, in the National Museum with first Vice-president HYSLOP in the chair, and 18 members and 10 visitors present.

The Corresponding Secretary, Mr. ROHWER, read a circular letter from the International Institute for Intellectual Cooperation connected with the League of Nations requesting information on methods of distribution of technical publications in foreign countries. This matter was referred by the Society to the Corresponding Secretary, with power to act.

Dr. A. L. MELANDER, of the College of the City of New York, and Miss GRACE SANDHOUSE of the Federal Horticultural Board, were elected to membership.

Program: W. A. HOFFMAN, of Johns Hopkins University: *Biological notes on Haitian Anophelines*. (Illustrated by lantern slides.) The two species of *Anopheles* known from Haiti, *A. grabhamii* and *A. albimanus*, were discussed, emphasis being placed upon the relations between the larvae of these species and their environment. *A. albimanus* in the main chose still water exposed to the sun, *A. grabhamii*, shaded streams. In some localities springs were of little importance as breeding areas of *A. albimanus*, while in other localities larvae abounded in them. The difference was ascribed to the different plant constituents present in the springs of these regions. Rice fields were carefully studied owing to the high incidence of malaria in coastal areas where this crop was grown. *A. grabhamii* seldom occurred in such situations. The two species reach their greatest abundance at different times, *A. albimanus* reaching its peak during the last third or quarter of the year, *A. grabhamii* as a rule in the period from January through March. Where favorable conditions obtain at all times great numbers of *A. albimanus* can be taken throughout the year. *A. albimanus* is believed to be the form chiefly responsible for the transmission of malaria. (*Author's abstract.*)

Asked in regard to food material Mr. HOFFMAN stated it to be blue green algae, *Spirogyra*, diatoms and plankton. Mr. ROHWER asked in regard to control, which was stated to be primarily cleaning out vegetation. HYSLOP and BAKER asked further questions in regard to control and Dr. S. F. BLAKE asked in regard to the deleterious effect of *Chara*.

Miss B. M. BROADBENT: *Notes on the habits and development of the Azalea leaf miner, Gracilaria Azaleella Brants*. (Illustrated by lantern slides.) This species appears to be a native of Japan and first reached the United States prior to 1912 on azaleas imported from Holland. It has since become established in New York, New Jersey, Pennsylvania, Florida and the District of Columbia. An infestation of the azalea leaf miner at the U. S. War Department greenhouses in 1923 was brought to our attention and afforded an opportunity to study its habits and development. The moth deposits minute eggs singly close to the midrib on the ventral leaf surface which hatch about a week later. The larva immediately enters the leaf and feeds as a leaf miner for from ten to sixteen days, molting twice before cutting its way out and becoming a leaf roller. At first only the extreme tip is folded downward and attached to the midrib, but after each molt the larva cuts its way out and moves to a fresh leaf where it infolds and skeletonizes a greater area. The process of webmaking gives evidence of its remarkable industry. One larva while attaching leaf margins with webbing was observed to balance on its prolegs and sway to and fro 2367 times in one hour. For a period of 25 con-

secutive minutes it averaged 55 oscillations per minute or nearly one per second. As many as thirty strands may be attached between two points before changing position. By working from either side of the midrib the webbing is cross hatched, and shorter strands bring the surfaces in contact. The ends are filled with fan shaped webbing which is later snipped out to bring opposing edges in contact. Folded leaves are often cone-shaped. The larval period varied from 20 to 34 days during April, whereas the previous generation had required about 55 days.

When ready to pupate the larva attaches strands of webbing across each end of the slightly rolled edge of the ventral leaf surface, filling in the central area last. Before emergence it forces itself half way out of its cocoon so that the moth leaves the exuvia projecting from it. The pupal period varied from 7 to 16 days. The sexes appeared in about equal numbers. One female deposited 40 eggs. Longevity varied from 1 to 9 days. (*Author's abstract.*)

Messrs. SIMMONS and SCHAUS discussed the emergence of the pupa from the cocoon. Dr. ELY stated that a native species of *Gracilaria* in Connecticut on swamp azalea is badly parasitized. Mr. ROHWER and Dr. WEIGEL stated that in the introduced species there were no parasites. The out-door distribution of the species was given as New York, Pennsylvania, Connecticut and Florida. Dr. CORY of Maryland found similar work on azalea in breeding beds.

Under notes and exhibition of specimens Dr. BÖVING showed a plate with habitus figures and anatomical details of the larva of the flea beetle *Oedionychis gibbitarsa* (Say). He described a few of the characteristic structures of the larva, especially the maxillary mala. The latter is apparently single, but consists (as a comparison with other Chrysomelid larvae proves) in reality of a well developed galea and a large lacinia that is situated behind galea and completely fused with it. The galea carries a two-jointed peg and irregularly distributed setae; the lacinia is armed with a longitudinal series of long stiff setae. The remarkable bilobed mala in the *Donaciinae*, strongly adapted for sapsucking purposes, is a further development of the morphologically simpler structures in the *Halticinae* and other Chrysomelid larvae, combined with the presence of a long stylus from the end of lacinia as it occurs in several Coleopterous larvae, for instance, in many *Ptinoid* larvae but not in the *Halticinae*.

Dr. HOFFMAN inquired in regard to the food habit of *Blephridae*. Mr. BARBER stated that it was sumac.

SPECIAL MEETING

On April 20 a special meeting of the Entomological Society was held at which Vice-president, J. E. GRAF, called the meeting to order and requested Dr. HOWARD to preside. Dr. HOWARD in introducing the speaker, Dr. R. J. TILLYARD of Cawthron Institute, Nelson, New Zealand, stated that this was only the third time a special meeting had been called to honor distinguished foreign visitors. Dr. TILLYARD talked on the fossil insects in the more important and larger orders and showed some excellent pictures of the fossils, which were of great interest to systematists of the Bureau of Entomology. Some of the prototypes of present families and groups were of particular interest, especially in the case of the roaches and beetles, there being some slight indication of a common ancestor of these two groups as well as a common ancestor between the roaches and termites.